

# PRODUCT SPECIFICATIONS

RAYTHEON  
MOUNTAIN VIEW

**RM3002**  
PHOTO DARLINGTON

The RM3002 is an NPN silicon planar photo sensitive Darlington Compound Amplifier. This device combines a lens window with an integral light sensing amplifier. The result is extreme sensitivity in a very small package. The planar construction and the stringent process controls prevalent at Raytheon insures the ultimate in reliability.

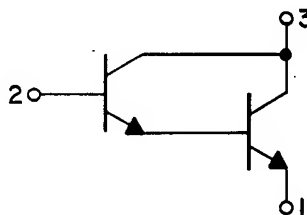
## MECHANICAL DATA

**CASE:** JEDEC TO-18

### TERMINAL CONNECTIONS:

Lead 1 Emitter  
Lead 2 Base  
Lead 3 Collector (Electrically connected to case)

### CONNECTION DIAGRAM:



## ELECTRICAL DATA

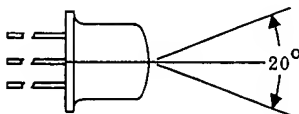
### MAXIMUM RATINGS:

Collector to Base Voltage $V_{CBO}$	60 volts
Collector to Emitter Voltage ( $R_{BE} \leq 10\Omega$ ) $V_{CER}$	40 volts
Collector to Emitter Voltage $V_{CEO}$	30 volts
Emitter to Base Voltage $V_{EBO}$	7.0 volts
Total Device Dissipation	
@ Case Temperature $25^\circ\text{C}$	1.8 watts
@ Case Temperature $100^\circ\text{C}$	1.0 watt
@ Free Air Temperature $25^\circ\text{C}$	0.5 watt
Junction Temperature	$-65$ to $+200^\circ\text{C}$
Storage Temperature	$-65$ to $+300^\circ\text{C}$

### ELECTRICAL CHARACTERISTICS: @ $25^\circ\text{C}$ (unless otherwise noted)

PARAMETER	SYM.	CONDITIONS	MIN.	MAX.	UNITS
Dark Current	$I_{CEO}$	$V_{CE}=20\text{ V}$	---	10	$\text{m}\mu\text{A}$
Dark Current	$I_{CEO}$	$V_{CE}=20\text{ V}$	---	100	$\mu\text{A}$
		$T=150^\circ\text{C}$			
Collector Dark Current	$I_{CBO}$	$V_{CB}=30\text{ V}$	---	10	$\text{m}\mu\text{A}$
Collector Dark Current	$I_{CBO}$	$V_{CB}=30\text{ V}$	---	15	$\mu\text{A}$
		$T=150^\circ\text{C}$			
Light Current Sensitivity		$V_{CE}=12$	25		$\mu\text{A}/\text{ft. Candle}$
		100 foot candle illumination level			

### ALIGNMENT:

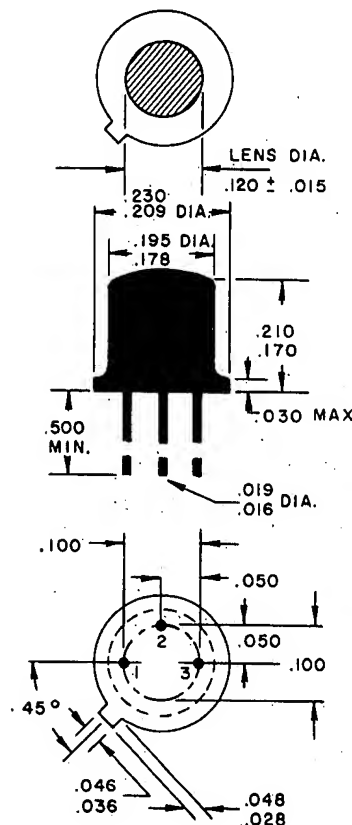


Maximum sensitivity falls within a  $20^\circ$  cone whose axis coincides with the central axis of the lens.

## PHOTO SENSITIVE DARLINGTON COMPOUND AMPLIFIER

### NPN PLANAR FEATURES

- High Sensitivity
- 3 Lead Configuration
- High Stability
- Low Noise
- High Gain



This document is part of an integrated file. If separated from the file it must be subjected to individual controls review.

**RAYTHEON**

**RAYTHEON COMPANY**

**SEMICONDUCTOR DIVISION**

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